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ABSTRACT

This manual is one of a series developed for public education on smoke detectors. First, basic facts are given including guidelines for selection and purchasing, installation, maintenance, and what to do if the alarm goes off. Second, five case studies are presented which are examples of public education programs. (The script to one slide presentation is included in this section.) Third, information on and sources of brochures, films, slide presentations, radio and television "spots," recent media articles, educational programs and materials, consumer information, and technical information is given. Fourth, smoke detector legislation is examined. Included is a list of decision points and options to be considered in drafting or amending state or local legislation, a state-by-state summary of smoke detector legislation, three samples of local legislation, and a list of sources for building codes and smoke detector codes and standards. Concluding the manual is a brief discussion on the evaluation of smoke detector education programs. Included is a sample fire incident reporting form which has two items that relate to the effectiveness of smoke detectors in fire loss reductions. (Related documents include Smoke Detectors and Legislation, CE 017 146, and Smoke Detector Technology, CE 017 147.) (JH)

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SMOKE DETECTOR RESOURCE CATALOG

U.S. DEPARTMENT OF COMMERCE
Juanita M. Kreps, Secretary

National Fire Prevention and
Control Administration
Howard D. Tipton, Administrator
David A. Lucht, Deputy Administrator
David M. McCormack, Superintendent, National Fire Academy
Richard Strother, Associate Administrator for Public Education
Dr. Joseph E. Clark, Associate Administrator for Fire Safety and Research
Philip S. Schaenman, Associate Administrator for Data

"Smoke detectors are the best way to save lives in residential fires. We in the news business stand ready to support your smoke detector programs. As you are well aware, smoke detectors are but one component of over-all fire safety. Devising an escape plan, teaching stop-drop-and-roll, buying flame retardant sleepwear are among the many other elements that make up an effective fire safety program. Use the media to get the fire safety message to the American people now."
—Peter Hackes, NBC News

CE 017 146

June 1977

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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*VOLUME I: **The Smoke Detector Resource Catalog**

A fact sheet on smoke detectors, guides to finding smoke detector materials, case histories of successful programs, a legislative overview, and evaluation techniques.

VOLUME II: **Smoke Detectors: Moving the Public**

A 2-part manual on generating support through community organizations and the media.

VOLUME III: **Smoke Detector Technology**

A detailed description of how smoke detectors work, including comparisons of ionization and photoelectric detectors.

VOLUME IV: **Smoke Detectors and Legislation**

An in-depth review of the current status of state and local smoke detector legislation.

VOLUME V: **Smoke Detector Training**

A suggested curriculum for training members of the fire prevention community to present smoke detector education to the public.

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*Contained in this Manual

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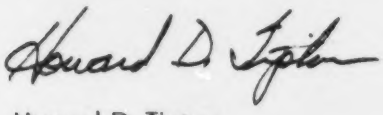
TO THE READER:

To help you meet the challenge and opportunity of a smoke detector campaign in your community, the National Fire Prevention and Control Administration has prepared a series of smoke detector public education manuals. Written in cooperation with the National Bureau of Standards, these manuals are largely based on successful local programs. The five manuals illustrate a coordinated effort within the NFPCA. Research, data, fire service training, and public education each are important elements of our smoke detector activities.

Within the Federal government, the National Bureau of Standards, the Consumer Product Safety Commission, and the Department of Housing and Urban Development are making unique contributions to smoke detector public acceptance. In the private sector, the National Fire Protection Association is actively involved in smoke detector installation standards development.

These manuals are presented in the full knowledge that while smoke detectors are essential, they are only part of your overall fire safety efforts. We hope you find them useful in your smoke detector public education campaign.



Howard D. Tipton
Administrator
National Fire Prevention and Control Administration

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SMOKE DETECTOR FACTS

There are four basic steps to residential fire safety through smoke detectors: purchase, installation, maintenance, and escape planning. For maximum protection, your audience must carry out each step.

USING THIS CHAPTER

"Smoke Detector Facts" may be placed by the fire department telephone as a ready reference for answering public inquiries. The chapter can also be reproduced for distribution to local audiences.

1. PURCHASE: SELECTING SMOKE DETECTORS FOR YOUR HOME

WHY PURCHASE A SMOKE DETECTOR?

Most multiple fatality residential fires occur between 9 p.m. and 6 a.m. Often these fires start when smoking materials fall on upholstered furniture or a mattress. The result is a slowly developing fire that may smolder for hours before bursting into flame. Smoke detectors sense the smoke and sound an alarm giving you time to escape.

HOW MUCH DO SMOKE DETECTORS COST?

Smoke detectors now cost between $25 and $40, depending on the model.

ARE OTHERS BUYING THEM?

Smoke detector sales soared to an estimated 8,000,000 in 1976. Many states, as well as cities and counties across the United States, require smoke detectors in new homes, apartments, mobile homes, and condominiums. Some communities have legislation requiring smoke detectors in both new and existing homes.

HOW MANY SMOKE DETECTORS WILL I NEED?

Smoke detectors on each level of the home give the highest level of protection. The first place to install a smoke detector is in the hallway outside the bedrooms.

WHAT ABOUT HEAT DETECTORS?

Heat detectors are effective in closed areas where rapid, flaming fires are likely to develop. For example, heat detectors can be helpful in basements, workshops, attics, and garages.

HOW SHOULD I SELECT A SMOKE DETECTOR?

The smoke detector you purchase should be listed or approved by a nationally recognized testing laboratory, such as Underwriters' Laboratories, Inc. The approval means that the detector is certified to meet basic performance standards.

WHAT TYPES OF SMOKE DETECTORS ARE AVAILABLE?

There are two basic types of smoke detectors: photoelectric and ionization.

Photoelectric smoke detectors use either an incandescent light bulb or a light emitting diode (LED) to send forth a beam of light. When smoke enters the detector, light from the beam is reflected from the smoke particles into a photocell and the alarm is triggered.

The ionization chamber smoke detector has a small radiation source that produces electrically charged air molecules called ions. These ions cause a small electric current to flow in the chamber. Smoke particles entering the chamber attach themselves to the ions, reducing the electrical flow. The change in current sets off the alarm.

WHICH ARE BETTER: PHOTOELECTRIC OR IONIZATION SMOKE DETECTORS?

Both types are approved by nationally recognized testing laboratories and either can do a good job in your home. Present technical evidence does not support a preference for one type or the other. The differences in response time are not considered critical for most residential situations.

IS THERE ANY RADIATION DANGER FROM IONIZATION DETECTORS?

The presence of a radiation source in ionization detectors is not a hazard. Before the detectors are placed on the market, the U.S. Nuclear Regulatory Commission performs a radiation safety analysis to insure that the detectors meet safety requirements. Consumers Union has conducted independent studies and has confirmed that there is no radiation danger from ionization detectors.

2. INSTALLATION: LOCATING SMOKE DETECTORS IN YOUR HOME

WHERE SHOULD I INSTALL MY SMOKE DETECTORS?

A smoke detector should be installed in the hallway outside each sleeping area in the home. The detector should be close enough to the bedrooms so that the alarm can be heard even with the bedroom doors closed. If you normally sleep with the bedroom door closed, consider adding an additional detector in the bedroom—

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particularly if you smoke in your bedroom. For more information on installation, read the manufacturer's instructions.

Since about one-third of all fires in homes with basements start in the basement, homes with basements should have a detector on the basement ceiling, above the bottom step.

HOW WILL I BE ABLE TO HEAR DETECTORS IN ANOTHER PART OF THE HOME?

It could be difficult, for example, to hear a basement detector from the bedroom when the door is closed. If your home needs more than one detector, consider buying models that can be inter-connected. When one inter-connected detector senses smoke, all detectors in the home sound an alarm.

SHOULD SMOKE DETECTORS BE LOCATED IN ANY PARTICULAR PART OF THE HALLWAY?

Since smoke rises, detectors should be placed on the ceiling or high on an inside wall just below the ceiling. Avoid placing detectors in the "dead" air high in corners. You should not place smoke detectors within 3 feet of an air supply register or between furnace air returns and the bedrooms. For ceilings below uninsulated attics or in mobile homes, place detectors on an inside wall 6-12 inches below the ceiling.

HOW DOES THE DETECTOR'S POWER SUPPLY INFLUENCE INSTALLATION?

Batteries or ordinary household current can power smoke detectors. Installation and maintenance vary for each type of power.

Battery powered smoke detectors are easy to install: a screwdriver and a few minutes are all you need. Batteries cost between $1.50 and $10.00 and must be replaced about every 12 months. Make sure that the detector you buy has a standard size battery which can be easily purchased at your local store.

Plug-in smoke detectors are equipped with an 8-9 ft. electrical cord. Like battery powered detectors, they are easy to install. Before purchasing a plug-in unit be sure that a wall outlet (that cannot be turned off by a wall switch) is available and can be reached by the cord from the detector.

Permanently wiring a smoke detector into the home's electrical system requires an electrician, who will normally charge between $35 and $50 for installation.

HOW RELIABLE ARE ELECTRICALLY POWERED DETECTORS?

Electrical service is quite reliable in many areas and less reliable in others. There is also a remote possibility that an electrical fire will disable a smoke detector before the alarm sounds. Since many electrical fires start in large appliances, you can minimize this possibility by wiring the detector to a circuit that does not serve TVs and other major appliances.

Some electrically powered smoke detectors have back-up batteries. Like other battery powered models, these units need new batteries yearly.

3. MAINTAINING SMOKE DETECTORS FOR BEST SERVICE

HOW DO I KNOW MY DETECTOR IS WORKING?

Testing detectors is simple. One easy method is to drift smoke into the chamber. Some models have a test button that activates the detector. All detectors should be tested montly or when the home has been vacant for a few days. Read the manufacturer's instructions for complete details.

Some smoke detectors are equipped with a pilot light that glows or flashes while electrical power to the detector is on. Even detectors with this feature should be tested occasionally.

Approved battery-operated smoke detectors will sound a "chirping" alarm for about seven days when the battery needs replacing.

Photoelectric smoke detectors subject to bulb replacement give a trouble signal when the bulb wears out and include a spare bulb within the unit. Those photoelectric detectors using LED's (light emitting diode) usually do not have trouble signal for the light source due to the long life of LEDs.

HOW MUCH MAINTENANCE IS REQUIRED?

Basic smoke detector maintenance is simple but critical for life safety devices expected to operate perfectly even though called on in rare events that may be years apart. Cleaning is especially important.

Dirt can "confuse" the detector and lead to a false alarm or can cause the detector to malfunction. Vacuuming or dusting the detector, along with periodic tests, will lessen the chances of false alarm and malfunction. Again, read the manufacturer's instructions for maintenance procedures.

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4. ESCAPE

WHAT DO I DO IF THE ALARM GOES OFF?

A smoke detector can alert you to a fire but your reaction to the alarm will determine your survival.

Every family should have a practiced home escape plan. Determine two exits—such as a door and window—from each room in the home.

- Practice crawling to safety to stay under the smoke.
- Before opening doors, touch the door knobs and top of the door to test for heat.
- Have an established meeting place outside for the family to gather.

Do not try to fight the fire yourself—use a neighbor's phone to call the fire department.

In addition, families should know how to react to clothing fires. Wearing *flame retardant sleepwear* will help protect you from clothing fires. Each member of the family should know and practice the "Stop-Drop-And-Roll" technique for smothering clothing fires.

CASE HISTORIES: Successful Programs Nationwide

Many communities across the country have conducted effective smoke detector and residential fire safety programs. A common thread throughout these success stories is involvement by community and service groups at a local level.

Since slide presentations are often part of successful programs, a script, "Smoke Detectors Save Lives," is included in this chapter. This script, along with slides that are often found in fire departments, can be used for presentations to schools, community groups, and service organizations. Or, the slides can be taken using a 35 mm camera.

USING THE CASE HISTORIES

These case histories are examples of the many approaches to smoke detector public education programs. The ideas in the various case histories can be combined to design and implement a program for your community. Check with your city attorney to determine possible fire department liability before selling smoke detectors.

USING THE SCRIPT

A good "rule of thumb" is to offer your audience variety by changing slides every 10 seconds. You can also vary the pace by showing several slides rapidly, then projecting one slide longer. You can substitute live demonstrations for some slides or you can make the presentation without the use of visual aids.

SLIDE PRESENTATIONS IN LAUREL, MARYLAND

Burton Clark of the Laurel, Maryland, Fire Department and Donald Hurdle of the Washington Metropolitan Area Transit Authority compiled a three-part slide presentation for the Laurel Volunteer Fire Department. For less than $10, they produced a 53-slide show with accompanying script. Three areas of fire prevention were emphasized: home fire hazards, escape planning, and smoke detectors. Since January 1975, Clark and Hurdle have presented the program to adult community groups in the Laurel area. Recently a preliminary telephone survey of 1,200 Laurel area households who had viewed the slides was conducted. Seven hundred, or approximately two-thirds, had purchased smoke detectors after viewing the slide presentation. Slide presentations are an easy and inexpensive way to tell the smoke detector story.

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DETECTORS AT A DISCOUNT IN MONROEVILLE, PENNSYLVANIA

In Monroeville, Pennsylvania, Dan Aston of the local fire department developed a smoke detector specification based on NFPA and Underwriters' Laboratory standards. Using this specification, the city government invited manufacturers to submit a bid price for 2,000 units. The lowest bidder received the order and a public education campaign to sell the units followed immediately. Tax bill inserts, newspaper stories, local television and radio interviews, and presentations in shopping centers and to civic groups were all employed to increase public awareness of the need for smoke detectors and their availability at a reduced price. Interested citizens received a certificate from the city to purchase detectors from the manufacturer at a discount. The results were excellent: all 2,000 detectors were sold in a matter of weeks.

SLIDE PRESENTATION AND DETECTORS AT A DISCOUNT IN COLUMBUS, OHIO

Clair Young of the Ohio State University Cooperative Extension Service prepared a slide presentation (see "Materials" in this Manual) specifically to illustrate the fire protection value of smoke detectors. Presentations of this 25-slide show, *Wake Up, Get Out and Live,* have been sponsored by the Ohio Farm Bureau Federation and the Ohio State Grange since the spring of 1975. After each presentation an offer is made to the membership to purchase approved smoke detectors at a discount. Mr. Young feels that this slide show has been responsible for the sale of at least 5,000 smoke detectors in the past year. The use of the slide show by manufacturers in their sales promotion and demonstration activities has probably resulted in the sale of an additional 5,000 smoke detectors. The combination of a slide show demonstrating the benefits of smoke detectors with the offer of discount prices is an exceptionally successful approach to smoke detector public education.

DOOR-TO-DOOR PROMOTION IN COLUMBUS, OHIO

In 1974, a smoke detector saved the life of Fire Chief Charles Hovermale of the Grandview Heights Fire Department near Columbus, Ohio. This experience prompted him to initiate a public education campaign in the suburban community of 9,000 residents. Firefighters were recruited to go door-to-door, encouraging homeowners and apartment dwellers to purchase and install smoke detectors. The firefighters distributed specification sheets from a cooperating supplier who had responded to a publicly advertised request for price bids. Firefighters stressed a fire protection

program that included both "an early warning device and an escape plan." In a little over two months during the late summer of 1976, more than 3,000 residential units were visited. As of September 7, 1976, one week after the conclusion of the campaign, the supplier reported 180 detectors sold at the rate of 5-6 per day.

MANDATORY INSTALLATION OF SMOKE DETECTORS IN SAN CARLOS, CALIFORNIA

San Carlos, California, passed an ordinance in March 1974, requiring the installation of smoke detectors in existing residential structures that are rented, remodeled structurally for $1,000 or more, or sold. However, compliance is not necessarily assured because of the difficulty in enforcement. Accordingly, Chief Richard Bosted of the San Carlos Fire Department instituted a public education program making use of a film strip and tape dramatization of loss of life without smoke detector equipment. The filmstrip, developed by a manufacturer, was presented to school groups, homeowners' organizations, realtors, and service clubs. A question and answer session with San Carlos firefighters followed each presentation. Chief Bosted believes that the education program served to educate many realtors into complying with the ordinance. One woman, who complied grudgingly, later sent a letter saying that her life was saved by a smoke detector. Bosted estimates that approximately 60% of the 11,000 residential units in San Carlos are now equipped with one or more smoke detectors. This example serves to underscore the fact that an effective public education effort is always necessary, even when smoke detectors are made mandatory.

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"SMOKE DETECTORS SAVE LIVES"

VISUAL	VOICE-OVER OR NARRATION
Slide of burning home, with firefighters on the scene	Each year, 90,000 American homes are damaged or destroyed by fire.
Slide of burned home	The property losses from fire approach $4.4 billion annually.
Slide of rescue situation	More than 6,600 people die in residential fires in this country every year.
Slide of ambulance rushing to hospital	Fires in the home injure at least 300,000 people per year. Many of them are crippled or permanently disfigured.
Slide of burning home	Perhaps even more staggering than these statistics is the fact that the U.S. leads most other industrialized nations of the world in fire incidence, injury, and death. For instance, twice as many people are killed in fires in America as in second-ranking Canada.
Slide of man relaxing in easy chair; smug look on his face	There are two basic reasons for this extraordinarily poor record: ignorance and indifference. Too many of us feel that fires happen to the "other guy" and too few of us know as much as we should about fire safety and fire prevention. Today, I'd like to talk about a few simple steps each one of you can take to protect your own life, and those you care about most, in the event of a house fire.
Slide of darkened house—no fire visible, nighttime	Let us look at a typical American house fire. All too often it is a fatal fire. And let's put this fire in *your* house. You'll notice that it's night and no flames are visible.
Graphic slide illustrating fatal fire occurance times	About 3/4 of all fatal house fires occur between 9 p.m. and 6 a.m. Many people killed in house fires die from smoke, toxic gases, or lack of oxygen—often without waking up and often in the first few minutes of the fire.
Slide of Smoke Detector and/or live demonstration	Let's also assume that you have one or more of these in your home. It's a smoke detector—it can sense the presence of smoke from a fire in your home before you can—especially if you're asleep.
Slide of living room with wastebasket near drapes or sofa smoking heavily	Your fire began about 3 minutes ago in the living room on the ground floor. You are upstairs—asleep—just down the hall from the kids' room. They're asleep too.
Sound effects, demonstrate detector alarm, or use tape recording. Close-up of smoke detector	Needless to say, you're not asleep anymore.
Slide of children sleeping	You shout a warning to other members of your family.
Slide with caption, "Have an escape plan. Practice it!"	And, because you've practiced an escape plan—with your whole family—everyone in the house knows that to do next.
Slide of crawling to exit	You stay low to the floor so that you are not overcome by smoke.

Slide of exit and meeting	If the hallway is clear, you gather the kids and proceed calmly down the stairs and outside to a prearranged meeting place. If the hall is obstructed, use your back-up escape routes of windows or another hall.
Slide of making phone call	After everyone is safely out, go to a neighbor's house and call the fire department and give your name and address and stay on the line until the fire department has any other information they need. Don't go back into your home. You and your family are safe and that's what's important.
Slide of trucks rolling out	And the chances are good that the smoke detector's early warning has let you call the fire department in time to put out your fire before there is significant damage to your home.
Slide of smoke detector	Now let's go back to the little device that just saved your life: a home smoke detector unit. There are many different brands on the market, but all are of one or two basic types—photoelectric or ionization. Both types work equally well. I will be glad to answer questions on how they work at the end of this presentation.
Slide of smoke detector "sensing" smoke or slide of a nose	For the moment, let's say that smoke detectors, regardless of type, can "sense" what we call the "products of combustion." These products are *made up of visible smoke, and invisible . . . and* ordorless . . . toxic gases such as carbon monoxide. A smoke detector, however, senses these by-products of a fire and sounds an alarm like this.
Sound Effects: Smoke detector alarm, if possible. *UL label*	Smoke detectors which have been listed by a nationally recognized testing laboratory such as Underwriters' Laboratories must sound an alarm of 85 decibels, a noise which I think you'll agree is loud enough to wake even the soundest sleeper.
Slide of stopwatch or caption, "Early warning device," overlaid on smoke detector	The real advantage of a smoke detector is that it gives you and your family an early warning of an impending fire. These precious few minutes of time are the safety margin which can save your life.
Repeat caption slide	But only if you and your family are prepared; if you know what to do and have practiced an escape plan.
Repeat slide of crawling to exit	Stay low, don't jump out of bed and run the risk of encountering smoke, gases, and superheated air which may be hovering over your bed.
Slide of family exiting from window	Check your escape routes. Always have a second escape plan.
Slide of a child's toy or doll	Don't stop to get your belongings. Remember, you may have only minutes to escape. Don't stop for anything—possessions can be replaced. Your life cannot.
Repeat slide of phone call	Gather outside and when you're sure everyone is safe, go to a neighbor's house and call the fire department. Give your name and address and stay on the line until told to hang up.

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Repeat slide of trucks rolling

Don't go back into the burning house for any reason. Let the firefighters do their job.

Slide of darkened house, at night.
Peaceful scene

The home smoke detector unit in this house can save the lives of the people who live here. Please buy and install one of these life-saving devices in your home today. Practice a fire escape plan with your family and be prepared. Smoke detectors are the best protection you can have for you and your family. Smoke detectors save lives.

MATERIALS

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A variety of materials is available for your use in presenting smoke detector information in your community. Much of the material can be obtained at little or no cost; those with limited budgets should consider enlisting the aid of local civic groups to purchase materials.

The materials listed in this Volume have been successfully field tested in communicating the smoke detector message. In selecting your materials, try to offer your audience variety.

BROCHURES
Are very effective in providing information that the audience can take home for future reference.

AUDIO-VISUAL MATERIALS
Offer information that the audience can both see and hear. Slide presentations can be "homemade" to suit a local audience at little cost and can be changed or updated easily. Films present information in a "smooth" professional way.

TELEVISION AND RADIO SPOTS
Are brief and to the point. Television and radio spots have a large potential audience.

MEDIA ARTICLES
Are often available in public libraries and reinforce the growing use of smoke detectors.

ADDITIONAL RESOURCES
To help locate education programs, consumer information, technical information, and more educational materials.

BROCHURES

"PEOPLE AND FIRE"
This 38-page illustrated booklet tells what to do in case of fire, how to lessen the likelihood of fire, and how to choose home fire detectors. Published by the Department of Housing and Urban Development, the booklet costs $1.10. When ordering, request Doc. No. HH 1.6/3:f 51/2
WRITE:
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

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"SMOKE DETECTORS: WHAT THEY ARE AND HOW THEY WORK"

This brochure provides information on smoke detector operation to assist in consumer decisions on purchase, installation (including location), and maintenance, as well as home escape planning. Single copies are free and negatives may be borrowed for re-printing.

WRITE:
Consumer Information Center
Pueblo, CO 81009
(for single copies)

Center for Consumer Product Technology
National Bureau of Standards
Washington, D.C. 20234
(for negatives)

"WAKE UP! SMOKE DETECTORS CAN SAVE YOUR LIFE IF..."

A non-technical brochure designed to arouse public interest in residential fire protection, jointly prepared by the NFPCA, the National Bureau of Standards, and the Consumer Product Safety Commission. Black-and-white and color negatives for re-printing are available, at no cost, from NFPCA.

WRITE:
Public Education Office
National Fire Prevention and
Control Administration
P.O. Box 19518
Washington, D.C. 20036

"EXIT: ESCAPE FROM FIRE WHEREVER YOU ARE"

This brochure explains how to plan and complete home fire escape. Available in both English or Spanish for $3.60/100 copies as NFPA Catalogue No. G-9B.

"SECONDS COUNT ESCAPE PLANNER"

The brochure provides information on home fire escape planning, with a grid for developing individual escape plans. Smoke detectors are mentioned. Available as NFPA Catalogue No. G-100, the brochure costs $5.80/100 copies.

"HOME FIRE DETECTION"

The brochure discusses home escape planning and emphasizes selection and maintenance of heat and smoke detectors. The brochure is available for $3.60/100 copies as NFPA Catalogue No. C-105A.

WRITE:
National Fire Protection Association
Publications Sales Office
470 Atlantic Avenue
Boston, MA 02210

AUDIO-VISUAL MATERIALS

FILMS

"THE BONDI STORY"

The case history of a residential fire is presented. The fire victim outlines uses, types, and advantages of detection devices. This 1976 film runs 12 minutes and is available for purchase at $195 and rental at $30 per week.

WRITE:
Film Communicators
11136 Weddington Street
North Hollywood, CA 91601

"DONALD DUCK'S FIRE SURVIVAL PLAN"

Donald Duck and his nephews present an escape plan. The need for an escape plan and how to plan and how to achieve escape are the basic themes of the film.

WRITE:
Walt Disney Educational Media Company
500 South Buena Vista Street
Burbank, CA 91521

"FIRE—TWO WAYS OUT"

This 10-minute film produced in 1973 shows home escape planning for one and two-family homes and apartments. The film is available for $140 as NFPA Catalogue No. FL-221.

WRITE:
National Fire Protection Association
Publications Sales Division
470 Atlantic Avenue
Boston, MA 02210

"A TIGER IN THE HOUSE"

The film shows smoke detector location, installation, and home escape planning, as well as the reaction of a sleeping person to smoke in her bedroom. The film's purchase price is $185.

WRITE:
Area 16 Productions
917 N. Highland Avenue
Hollywood, CA 90038

"WHAT IF WE HAD A FIRE?"

A ten-year old boy and his family develop and practice a home escape plan and learn about smoke detectors from their local fire department. The film is available for free loan or $95 purchase.

WRITE:
Junior Fire Marshal Headquarters
Hartford Insurance Company
Hartford, CT 06115

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SLIDE PRESENTATIONS

"SMOKE DETECTORS SAVE LIVES"

A suggested slide presentation script, designed to use stock photos available in many fire departments, is included in this Volume. See page 10.

"WAKE UP, GET OUT AND LIVE"

This slide presentation has been responsible for the installation of more than 5,000 detectors. 27 slides and accompanying script show the need for early warning devices in the home and provide steps in developing home escape plans. The presentation is available for $15 per set.

WRITE:
Mr. Clair Young
Ohio Cooperative Extension Service
Ohio State University
2120 Fyffe Road
Columbus, OH 43210

TELEVISION AND RADIO "SPOTS"

DOING YOUR OWN

Local television and radio stations are usually very receptive to developing public service announcements or short specials on local topics. Consider approaching your local television and radio stations for a short statement on smoke detectors and residential fire safety.

USING COMMERCIALLY DEVELOPED "SPOTS"

Many corporations and national retailers, such as Sears, Roebuck and Company and the Hartford Insurance Company, have produced television and radio spots on smoke detectors and escape planning for viewing in your communities in 1977. These will be sent to many local television and radio stations. Encourage them to use these materials and coordinate their placement with your own smoke detector programs.

"LEARN NOT TO BURN"

As part of its "Learn Not To Burn" program, the National Fire Protection Association has an excellent, widely distributed radio and television series featuring 11 television spots by actor Dick Van Dyke and radio spots by sports figures. Again, this series should be promoted and coordinated with your local stations as part of your smoke detector program.

RECENT MEDIA ARTICLES ON SMOKE DETECTORS

"Smoke Detectors." *Consumer Reports,* October 1976, pp. 555-559.

"Smoke and Heat Alarms for Your Home." *Changing Times,* September 1976, pp 13-14.

"Smoke Detectors: Early-warning Lifesavers for Your Home," by Richard Stepler. *Popular Science,* December 1975, pp. 83-5.

"Smoke Detectors Required . . . In an Attempt to Save Lives." *The Washington Post,* September 16, 1976, pp. Md.1, Md. 6.

"Where There's Smoke . . . There Better Be a Smoke Detector." *IEEE Spectrum,* August 1976, pp. 24-6.

"Silent Killer: Smoke in Home Fires Is the Villain." *House Beautiful,* May 1976, pp. 12+

"How to Buy and Install Home Smoke Detectors," By W. Thomas. *Mechanix Illustrated,* September 1976, pp. 34, 35+

"Hot Time for Smoke Detectors." *Business Week,* January 19, 1976, pp. 28+

"Hot Item: A Life-Saving Squawk." *Time,* January 10, 1977: p.36.

"Are Smoke Detectors Hazardous?" *Consumer Reports.* January 1977, pp. 52-4.

"Sales of Home Smoke Alarms Catch Fire, Fueled by Support From Nearly Everyone," by John Valentine. *The Wall Street Journal,* March 17, 1977. p. 42.

ADDITIONAL RESOURCES

EDUCATIONAL PROGRAMS

Information on locally developed educational materials used in successful fire prevention programs is available.

WRITE:
Public Education Office
National Fire Prevention and
Control Administration
P.O. Box 19518
Washington, D.C. 20036

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CONSUMER INFORMATION

The Consumer Product Safety Commission has extensive consumer information on sources of ignition.

WRITE:
Bureau of Information and Education
Consumer Product Safety Commission
Washington, D.C. 20207

TECHNICAL INFORMATION

Technical information, research results, and statistics on all aspects of residential smoke detection are available.

WRITE:
Fire Research Information Services
National Bureau of Standards
Building 225, Room A57
Washington, D.C. 20234

EDUCATIONAL MATERIALS

The "NFPA Publications and Visual Aids Catalogue" provides a list of NFPA materials, along with a description of each publication, including posters, and films. Order forms are also included. Among the smoke detector information is an "Escape Game Placemat," which allows participants to work their way through an escape maze. The Catalogue is free.

WRITE:
National Fire Protection Association
Publications Sales Office
470 Atlantic Avenue
Boston, MA 02210

The Hartford Insurance Company has an excellent fire prevention program for children at the kindergarten through third grade levels. The program offers magazines for students and teacher guides, as well as films and film strips, posters, and incentive awards.

WRITE:
Junior Fire Marshal Headquarters
Hartford Insurance Company
Hartford, CT 06115

SMOKE DETECTORS AND LEGISLATION

NOTES

State and local legislation requiring the installation of residential smoke detectors reflects the growing awareness of the life-saving potential of smoke detectors. By early 1977, approximately half of the states and many communities nationwide had enacted some level of smoke detector legislation. However, much remains to be done in this crucial area.

LEGISLATION: THE CONTINUING NEED

A list of decision points and options to be considered in drafting or amending state or local smoke detector legislation.

A list of sources for building codes and smoke detector codes and standards.

LEGISLATION: THE CURRENT STATUS

A state-by-state summary of smoke detector legislation, compiled by the NFPCA's National Fire Safety and Research Office.

Samples of local legislation from Montgomery County, Maryland; San Carlos, California; and Minneapolis, Minnesota.

LEGISLATION: THE CONTINUING NEED

Anyone drafting or updating a smoke detector code or smoke detector legislation confronts a wide range of decision points and options. The decision points and options, combined with the advice of a State or city attorney, provide the technical base needed to write a smoke detector code tailored to local needs.

DECISION POINTS	OPTIONS
Occupancies affected	
	mobile or manufactured dwellings
	multi-family dwellings
	one- and two-family dwellings
	all living units
	any combination of the above
Time for Compliance	
	all new occupancies
	all occupancies changing tenants
	all occupancies sold (title change)
	all occupanies within 1, 3, or 5 years from effective date

any occupancy with a repair or remodeling valued in excess of $ (x) amount.
any combination of the above

Enforcement Methods

permit to occupy
fine for noncompliance
required for real estate title change
required for building permit
others specific to local area
any combination of the above

Enforcement Authority

building permits authority
fire department
fire prevention bureau
health and safety department
fire marshal
others specific to local area

Type (Approved or Listed) Detector

the detector must be sensitive to products of combustion, except that detectors sensitive to heat only are not acceptable
approved and listed by major testing laboratories
UL-217 specifications for detector performance
AC and/or DC powered

Location of Detector

(For additional details, see "Smoke Detector Facts" in this Volume or NFPA No. 74)
on ceiling or on wall 6-12" from ceiling
in corridor outside each separate sleeping area
multi-level dwellings (various locations—one per level)
distance from kitchen or fireplace

Installation Method

Follow NFPA 74

Type of "System"

single station, mainly to protect occupants of unit of fire origin
multiple station or "local" (see NFPA 74) where detectors are inter-connected between dwelling units and multi-family buildings

Responsibility for Compliance

installation—owner/landlord/tenant
maintenance—owner/landlord/tenant

LEGISLATION: THE CURRENT STATUS

At the time of writing, many state legislatures were considering legislation pertaining to

smoke/fire detectors. The bills were many and varied; some addressed the sellers and installers of detector equipment while others mandated detector installation. Any final state action taken will not be reflected in the Summary.

FOR CONSISTENCY

To keep the language consistent throughout the state-by-state summary several assumptions were made.

Unless otherwise noted, the law, ordinance, or any other form of regulation should be considered as a mandatory provision. Additionally, the presumption is that the regulation applies state, county, or city-wide.

The phrase "residential housing" or "residential construction" means one and two family dwellings (detached, semi-detached, duplexes, etc.) and multi-family dwellings (apartments, condominiums, etc.). The phrase should *not* be taken to include hotels, motels, guest, boarding, or rooming houses unless otherwise noted. Our information pertaining to requirements for these transient occupancies is not complete; thus, a failure to reference any regulations should not be taken to mean that no regulations exist. Note, however, that the 1976 Editions of both the Uniform Building Code and Standard Building Code require smoke/fire detectors in these commercial, transient, residential occupancies. The 1976 Supplement of the 1975 Edition of the Basic Building Code contains similar requirements.

The word "new" should also be taken to include those existing structures that are required to comply with the requirements of new construction. Generally, these include: (1) new additions of sleeping areas and (2) major renovations of the existing structure. The definition of "major renovation" may not be consistent and should be checked locally.

MOBILE HOMES

All references to state mobile home regulations have been omitted. Section 5403(d) of Title 42 of the United States Code (August 22, 1974; P.L. 93-383, Title VI, Section 604, 88 Stat. 701) specifies that:

> "Whenever a Federal mobile home construction and safety standard established under this title is in effect, no State or political subdivision of a State shall have any authority either to establish, or to continue in effect, with respect to any mobile home covered, any standard regarding construction or safety applicable to the same aspect of performance of such mobile home which is not identical to the Federal mobile home construction and safety standard."

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This Act is commonly known as the Mobile Home Construction and Safety Standards Act of 1974. Pursuant to this Act, the Department of Housing and Urban Development promulgated regulations governing mobile home construction. In particular, Section 280.208 of Title 24 of the Code of Federal Regulations sets the requirements for installation of smoke/fire detectors in mobile homes.

There is one notable exception to the general rule that mobile homes are not subject to State or local regulation. Section 5422(a) of Title 42 of the United States Code provides:

> "Nothing in this title shall prevent any State agency or court from asserting jurisdiction under State law over any mobile home construction or safety issue with respect to which no Federal mobile home construction and safety standard has been established . . ."

From the definition within the Act of the term "purchaser" as " . . . the first person purchasing a mobile home in good faith for purposes other than resale . . . " (42 U.S.C. 5402(10)), it would seem that the States would be free to regulate the sale of existing mobile homes. This, in fact, has been done in at least one State.

It must be emphasized that these Federal laws and regulations are quite new and have not been subjected to litigation and interpretation by the Courts.

DEFINING DETECTORS

The expression "smoke/fire" detector or detection should be presumed to mean that either a photoelectric or ionization type detector would be required under the law. However, this is not an absolute statement and should be checked locally. Many acts give power of approval of detection devices to the Fire Marshal or other specified public official or agency. There is no way to predict these decisions and the facts of any given specific situation may call for a specialized installation.

NFPA 74

Finally, NFPA 74, *Standard for Household Fire Warning Equipment,* has been used in a number of instances as a source of information and guidance in defining levels of protection. In some cases the local or State code specifically references NFPA 74, while in other cases the fire marshal uses the standard to determine type and placement of smoke detectors within his jurisdiction.

SMOKE DETECTOR LEGISLATION: THE CURRENT STATUS

ALABAMA

Alabama uses the 1976 Edition of the NFPA 101 Life Safety Code for child day-care centers. The administrative process for the adoption of the 1976 Edition of the Standard Building Code as a mandatory statewide regulation has been initiated.

ALASKA

The State of Alaska passed legislation, effective January 1, 1976, which requires that "smoke detection devices" shall be installed in all living units built, manufactured, or sold in the State. The sale of existing living units is governed by this legislation. The smoke detection devices must be of a type and placement approved by the State Fire Marshal.

ARIZONA

The State of Arizona has no statewide smoke/fire detection legislation applicable to residential housing.

The community of Payson requires smoke/fire detection in all new residential construction. Response from the City of Glendale indicates that Glendale and almost all of the cities and counties in this area have adopted the Uniform Building Code, which includes Section 1413 governing one and two family dwellings. The City of Phoenix does not require smoke/fire detectors.

ARKANSAS

No smoke/fire legislation, State or local, applicable to residential housing was located.

CALIFORNIA

Under a mandatory State Housing Law, all new dwelling units constructed after January 1, 1974, are required to have smoke/fire detection devices. The law references the Uniform Building Code and governs one and two family dwellings as well as apartments.

Local jurisdictions have established much more comprehensive smoke/fire detection ordinances, e.g., San Carlos, San Rafael, and Mountain View, California.

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COLORADO

The State of Colorado has adopted the 1973 Edition of the Uniform Building Code. However, the code is only enforceable in unincorporated areas of the State and in those incorporated localities that have not adopted a building code which, reportedly, are few in number. The Colorado Division of Housing has enforcement responsibility.

The Community of Aurora enforces the 1976 Edition of the Uniform Building Code requiring smoke/fire detection devices in new residential (as well as hotel/motel) construction. The building code of the city of Denver requires smoke/fire detectors in new residential construction.

CONNECTICUT

Under recent State legislation, Level Four (4) protection as defined in the "Standard for the Installation, Maintenance, and Use of Household Fire Warning Equipment," NFPA 74-1974, must be provided in all new construction of residential structures designed for two (2) or more families which require a building permit. This mandatory enactment became effective October 1, 1976.

Additional legislation to extend jurisdiction over single family dwellings is pending.

DELAWARE

The State of Delaware enforces the Life Safety Code (NFPA 101) for child care centers. Legislation requiring smoke/fire detection in all new residential housing (e.g., one and two family dwellings, apartments, hotels/motels) is pending.

New Castle and Kent Counties, as well as several cities and towns, have adopted and enforce the 1975 Edition of the Basic Building Code.

DISTRICT OF COLUMBIA

No smoke/fire detector legislation applicable to residential housing was located.

Legislation has been introduced in the City Council. Smoke/fire detection would be required in all new residential construction and all existing buildings subsequently renovated. Existing apartment buildings would be required to install smoke/fire detectors by July 1, 1978. Within thirty (30) days of the signing by the Mayor of any legislation, the United States Congress may veto or amend said legislation. Otherwise, the law becomes effective at the end of the thirty (30) day period.

FLORIDA

No smoke/fire detector legislation, State or local, applicable to residential housing was located.

GEORGIA

No smoke/fire detector legislation, State or local, applicable to residential housing was located.

Legislation governing new construction of duplexes and apartments is pending.

HAWAII

The State Fire Marshal of the State of Hawaii may adopt applicable fire codes (State Code, Section 132-1 and 132-17).

Honolulu and Kauai Counties have adopted and enforce the 1973 Edition of the Uniform Building Code. The 1976 Edition of the Uniform Building Code is presently under study by all four (4) of the Hawaiian counties; a meeting of the counties is planned for June 1977.

IDAHO

Pursuant to the Uniform Building Code Advisory Act, the State of Idaho enforces the 1973 Edition of the Uniform Building Code. The installation of smoke/fire detection devices is mandated in new residential construction.

The Life Safety Code (NFPA 101) governs those areas not addressed by the Uniform Building Code.

ILLINOIS

No smoke/fire detector legislation, State or local, applicable to residential housing was located. The Illinois Rules and Regulations for Fire Prevention and Safety require smoke/fire detection devices in stairwells and hazardous areas of certain transient residential occupancies (e.g., hotels/motels, rooming or lodging houses).

INDIANA

The State of Indiana has adopted the 1973 Edition of the Uniform Building Code. Any new home or apartment complex must be equipped with smoke/fire detectors.

IOWA

No smoke/fire detector legislation, State or local, applicable to private residential housing was located.

KANSAS

No smoke/fire detector legislation, State or local, applicable to residential housing was located. Legislation requiring partial detector protection (e.g., stairwells, hazardous areas) in apartments is under consideration.

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MASSACHUSETTS

The Massachusetts State Building Code requires that residential housing, including manufactured homes, shall contain smoke/fire detectors. The legislation specifies the minimum number of detectors as well as requirements for approved type detectors, their location, and mounting. The legislation applies only to buildings or structures for which permits were issued on or after January 1, 1975.

The City of Quincy, Massachusetts, requires a "permanently installed . . . approved detection and alarm system" in all new residential construction.

MICHIGAN

The State of Michigan enforces the 1975 Edition of the Basic Building Code and mandates smoke/fire detectors in all new residential construction. Local governments have the option of adopting the Uniform Building Code or Standard Building Code in lieu of the Basic Building Code. State law also requires that a smoke detector and fire extiniguisher must be provided within ninety (90) days after the sale of an existing mobile home.

MINNESOTA

The State Building Code of the State of Minnesota, based upon the 1973 Edition of the Uniform Building Code with some state amendments, requires smoke/fire detection devices to be installed in all new residential construction. While the State Building Code is not automatically a mandatory statewide code, any locality within the State that wishes to adopt a building code must adopt the State Building Code without local amendments. The major percentage of all populated areas are reportedly enforcing the State Building Code.

The White Bear Lake, Minnesota, Fire Department, in a communication to the public via the local press, has made a good case for the use of detectors as well as informing the public of the requirements of the law.

MISSISSIPPI

No smoke/fire detector legislation, State or local, applicable to residential housing was located.

MISSOURI

The State of Missouri is in the planning stages of a proposed statewide fire prevention code. However, as of this date, no smoke/fire detector legislation, State or local, has been located.

MONTANA

The State of Montana enforces the 1973 Edition of the Uniform Building Code statewide and requires smoke/fire detectors in all new residential construction.

NEBRASKA

The State of Nebraska has no smoke/fire detector legislation applicable to residential construction.

The city code of Lincoln, Nebraska, requires the installation of smoke/fire detectors in new residential construction.

NEVADA

The State of Nevada uses the 1973 Edition of the Uniform Building Code; however, each local jurisdiction must adopt the Code for the smoke/fire detector provisions to apply.

NEW HAMPSHIRE

Legislation sponsored by the Fire Marshal and fire chiefs is under consideration by the legislature; a previous bill had been defeated. At present, there is no state legislation in force that requires smoke/fire detectors in residential occupancies.

NEW JERSEY

Effective January 1, 1977, smoke/fire detection is mandated for all newly constructed one and two family dwellings. The State Building Code, fashioned after the 1975 Edition of the Basic Building Code, is not subject to local amendment.

NEW MEXICO

No smoke/fire detector legislation, State or local, applicable to residential housing was located.

NEW YORK

The building code of the State of New York requires smoke/fire detectors in all new residential housing. However, each local jurisdiction must adopt the state code for the provisions to apply. The building code, if adopted, is not subject to local amendment; only the Housing Code Bureau has authority to amend the State Building Code. To date, 659 municipalities have adopted the state code which, reportedly, encompasses the major percentage of the state's population. New York City, Rochester, Albany, and Buffalo have adopted their own codes.

NORTH CAROLINA

The State of North Carolina has a mandatory statewide building code and requests smoke/fire detectors in all new residential construction.

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NORTH DAKOTA

No statewide smoke/fire detector legislation applicable to residential housing was located. However, some legislation is pending.

The communities of Fargo, Bismarck, Grand Forks, and Wahpeton enforce the 1973 Edition of the Uniform Building Code; the 1975 Edition of the Basic Building Code has been adopted in Dickinson and Minot. Devils Lake has adopted the 1976 Edition of the Uniform Building Code with a local amendment requiring an additional detector in the basement or cellar of single family homes near the central heating plant. This amendment was in response to a local problem. The codes in the above cities pertain only to new construction.

OHIO

The Ohio State Building Code, a mandatory statewide code, requires smoke/fire detection in all new non-transient, non-sprinklered residential construction having four or more dwelling units. If the structure is a highrise building (greater than 75 feet in height as defined by Ohio law) then an "Automatic Smoke Alarm System" is required. This system must be supervised, notify a central station, auxiliary, or other like alarm service, have an annunciator panel, and provide local alarm to the floor of activation and the floor above. A bill is presently pending with the legislature that would require existing highrise apartments or condominiums to be equipped with an "Automatic Smoke Alarm System."

Under the Ohio Fire Code (1977 Edition), smoke/fire detectors are required in new residential construction with two (2) or more dwelling units. While this is mandatory state law with applicable civil penalties, enforcement is dependent upon local efforts.

OKLAHOMA

No statewide smoke/fire detector legislation applicable to residential housing was located. However, legislation currently pending would mandate smoke/fire detectors in all new residential construction effective June 1, 1978.

The City of Tulsa, Oklahoma, requires smoke/fire detectors in all new residential construction.

OREGON

The building code of the State of Oregon, a mandatory minimum/maximum code, requires smoke/fire detectors in all new residential housing.

PENNSYLVANIA

No statewide smoke/fire detector legislation applicable to on-site construction of residential housing was located. The Industrialized Housing Division within the Department of Community Affairs regulates the construction and sale of manufactured homes. These manufactured homes must comply with the 1975 Edition of the Basic Building Code and would require smoke/fire detection. Mobile homes are not considered as manufactured homes under the Industrialized Housing Act.

The City of Greensburg, Pennsylvania, has adopted the 1975 Edition of the Basic Building Code and requires smoke/fire detectors in new residential construction.

RHODE ISLAND

Mandatory, statewide legislation requires smoke/fire detectors in all new or modified one-, two-, and three-family dwellings (Section 23-28.34).

SOUTH CAROLINA

The State of South Carolina does not have statewide smoke/fire detection legislation. Several municipalities, counties, and state agencies have adopted the Standard Building Code.

SOUTH DAKOTA

The State of South Dakota has no statewide smoke/fire legislation applicable to residential housing. Legislation addressing this area was recently defeated in the legislature.

Smoke/fire detector legislation is under consideration in Sioux Falls, South Dakota.

TENNESSEE

No smoke/fire detector legislation, State or local, applicable to residential housing was located.

TEXAS

The State of Texas does not have statewide smoke/fire detector legislation. Many localities in Texas have adopted building codes which require smoke/fire detectors in new residential housing. The cities of Dallas and Richardson use parts of the Uniform Building Code, Sections 1310 and 1413, which require smoke/fire detectors in new residential construction.

Farmers Branch, Texas, a small suburb of Dallas, adopted an ordinance which not only requires installation of smoke/fire detectors in newly constructed residences, but also in existing homes upon a change of occupancy or ownership. Whenever a change in residence or ownership occurs in single-family housing, a certificate of occupancy must be obtained by the tenants. To secure this certificate, the new resident is required to install an approved smoke/ fire detector within thirty (30) days. A system of fines is provided as a means of enforcement of this ordinance.

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UTAH

Recent legislation has made the 1973 Edition of the Uniform Building Code the mandatory, statewide, minimum building code requiring smoke/fire detectors in new residential construction. The 1976 Edition of the Uniform Building Code is presently under study.

VERMONT

No smoke/fire detector legislation, State or local, applicable to residential housing was located.

VIRGINIA

The State of Virginia has adopted the 1975 Edition of the Basic Building Code as a mandatory, statewide minimum/maximum code for new construction. Smoke/fire detectors are required in new residential construction.

The Chesterfield County Board of Supervisors adopted an amendment to the County Fire Prevention Code which gives the Fire Department the authority to survey and specify smoke/fire detectors for existing multi-family dwellings (three or more dwelling units). The Fire Marshal is currently working to implement this ordinance.

WASHINGTON

The State of Washington incorporates Sections 1310 and 1413 of the 1973 Edition of the Uniform Building Code into the State Building Code (Section RCW 19.27). Smoke/fire detection is required in all new residential construction.

WEST VIRGINIA

No smoke/fire detector legislation, State or local, applicable to residential housing was located.

WISCONSIN

The State of Wisconsin has no statewide legislation applicable to residential housing.

The Village Board of the Village of Bayside in Milwaukee and Ozaukee Counties passed an ordinance regulating emergency alarm systems and requiring all new structures within the village to install smoke/fire detection systems when constructed. Existing structures, with the exception of one and two family dwellings, were required to install such systems within ninety (90) days. The legislation includes an incentive provision allowing homeowners to avail themselves of financing the installation of alarm systems through a special assessment program.

WYOMING

The State of Wyoming has adopted the 1976 Edition of the Uniform Building Code as a mandatory, statewide building code. Smoke/fire detection is required in all new residential construction as well as guest rooms in hotels and motels. This law became effective on March 4, 1977.

Montgomery County, Maryland, Smoke Detector Legislation

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BILL NO. 8-76
SMOKE DETECTION

Be It Enacted by the County Council for Montgomery County, Maryland, that—

Sec. 1. The Montgomery County Code, 1972, Chapter 22 Title "Fire Safety Code" be and hereby is amended by adding thereto a new Section 22-96, Title "Smoke Detectors," to read as follows:

22-96. Smoke Detectors

A. *Requirement:* It shall be the responsibility of the owner of each new and existing occupied dwelling unit to install smoke detectors in each such dwelling unit as hereinafter provided. Said smoke detectors shall be capable of sensing visible or invisible particles of combustion and providing a suitable audible alarm thereof; further, they shall be installed by July 1, 1978, in the manner hereinafter provided (unless any other provision of County, State, or Federal law shall require installation before that date). Failure to install smoke detectors as and where required by said date will subject the property owner to the penalties set forth in Section 22-22 of the Fire Safety Code of Montgomery County.

B. *Location:* (1) At least one smoke detector shall be installed to protect each sleeping area. A sleeping area is defined as the area or areas of the family living unit which the bedrooms (or sleeping rooms) are located. Where bedrooms or rooms ordinarily used for sleeping are separated by other-use areas (such as kitchens or living rooms, but not bathrooms or closets), they shall be considered as separate sleeping areas for the purposes of this section.

(2) At least one smoke detector shall be installed at the head (top) of each stairway leading up to an occupied area in such a manner as to assure that rising smoke is not obstructed in reaching the detector and the detector intercepts rising smoke before it reaches the sleeping area.

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C. *Alternative:* As an alternative to self-contained smoke detectors, an approved fire detection system may be installed. Each fire detection system must be individually approved and a permit issued therefor by the Department of Fire and Rescue Services.

D. *Equipment:* All devices, combinations of devices, and equipment required herein are to be installed in conformance with the Building Code and this section, and approved by the Montgomery County Department of Fire and Rescue Services and listed by said Department for the purposes for which they are intended; said list may be subsequently amended by the Department of Fire and Rescue Services as necessary. Such approval shall be permanent unless the Director subsequently finds that the equipment is hazardous or unreliable, in which case, the Director may suspend or revoke approval. The Director may in any such case determine whether replacement of existing installation shall be required. Transfer to the inactive list shall not affect equipment approval.

E. *Installation:* In new residential dwellings, smoke detectors shall be wired directly (hard-wired) to the building's power supply. In existing dwellings within multi-family buildings of ten units or more, the detectors shall meet the multi-family building power source requirements of State law, or in the absence of State law, the requirements hereunder covering other existing dwellings. In other existing dwellings, it is preferred that smoke detectors be wired directly to the power supply, however, said detectors may be powered by self-monitored battery or operated in a plug-in outlet which is fitted with a plug restrainer device, provided the outlet is not controlled by any switch other than the main power supply.

F. *Certification at Change in Occupancy:* After July 1, 1978, at every change of occupancy of every dwelling unit occasioned by or incidental to a sale, lease or sublease of said unit, it shall be the duty of the grantor thereof (i.e., the seller, lessor or sublessor, as the case may be) to certify, before occupancy, to the new occupant that all smoke detectors as required by this section (or other applicable laws) are installed and in proper working condition. Failure to comply with this subsection shall be punishable as set forth herein; provided however, that this subsection shall not be construed to vitiate or render void any contract, lease or sublease subject hereto.

G. *Permits and Fees:* No smoke detector or alternative system shall be directly connected (permanently wired) to the electrical system of the structure unless an electrical permit shall have first

been obtained from the Department of Environmental Protection or the municipal electrical permit authority having jurisdiction. The County Executive is hereby authorized to adopt a fee schedule for the issuance of said permit which shall not exceed the cost of administration of this section; further, the County Executive is authorized to waive, partially or wholly, the fee requirement at his discretion, or to issue multiple permits under the payment of a single fee.

H. *Supplemental Standards:* This section is intended to be used with and supplemented by the applicable provisions of the National Fire Protection Association Standards 72-E and 74, 1974 Editions, which are hereby incorporated herein; however, if there shall be any conflict between this statute and the said supplemental standards, this statute and any rules and regulations adopted pursuant thereto shall prevail.

Sec. 2. This section provides for an amendment to Chapter 26 of the Montgomery County Code, Title, "Housing Standards." The language in Section 2 is nearly identical in form, format and contents and is therefore not reprinted in this handout.

Sec. 3. Effective Date. This Act shall become effective on the 76th day following the date on which it becomes law.

Note: To reduce printing costs, title to the bill and certain other non-essential items have been deleted from this reprint. This bill was signed into law by the County Executive on September 14, 1976.

Minneapolis, Minnesota, Smoke Detector Legislation

CITY COUNCIL OFFICIAL PROCEEDINGS

Regular Meeting

January 28, 1977

AN ORDINANCE 77-Or-017
By Alderman Miller

Amending Chapter 244 of the Minneapolis Code of Ordinances relating to Maintenance Code. The City Council of the City of Minneapolis do ordain as follows:

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Section 1. That the following new Sections be added to the above entitled ordinance reading as follows:

"244.915. Fire warning system. Every hotel or motel sleeping room which is not located in a building of Type I or II construction, and every dwelling unit, shared bath dwelling unit, and rooming house shall be provided with an approved smoke detector as set out in this chapter. Owner occupied, single family dwellings shall be provided with approved smoke detectors meeting the requirements of any one of the following Underwriters' Laboratory tests: UL167, UL168, or UL217. Smoke detectors required for single family dwellings shall be mounted on the ceiling or wall, at a point centrally located, in the corridor or an area giving access to rooms used for sleeping purposes. Where sleeping rooms are located on an upper level, the required detector shall be placed at the center of the ceiling directly above the stairway. All detectors shall be located on the ceiling not less than 6 inches from the wall or, if located on the wall, at a point between 6 inches and 12 inches from the ceiling.

All dwelling units, hotel units, and motel units as set out in the first paragraph when let to another, shall be provided with a detector of products of combustion other than heat as specified in the first paragraph which shall be permanently wired to a proper unswitched circuit.

Smoke detectors, as set out in the first paragraph, shall also be provided in rooming houses in such numbers that when activated, the alarm is audible in all sleeping rooms and shall be provided on each and every floor used for sleeping purposes and within 15 feet of a doorway leading to every room used for sleeping purposes.

Compliance with the requirements pertaining to rooming houses, one and two family dwellings, hotel and motel units shall be required as of January 1, 1982. Buildings containing three or more dwelling units shall be brought into compliance with the provisions of this chapter not later than January 1, 1982.

When, in the opinion of the Director of Inspections and the Chief of Fire Prevention Bureau, conditions exist which warrant the installation of smoke detectors in a shorter time period than set out in this chapter, they shall be empowered to order and secure compliance with such installation orders.

244,916. Prohibited sale. It shall be unlawful for any person to sell within the City of Minneapolis any smoke detector unless said detector meets the standards set out within this chapter. A 'UL' label indicating the smoke detector is listed as a fire alarm device shall be satisfactory evidence the detector meets the requirements of this ordinance."

Passed January 28, 1977. Louis G. DeMars, President of Council

Attest: Lyall A. Schwarzkopf, City Clerk.

San Carlos, California, Smoke Detector Legislation

Section 1307 (g)

Every existing building used for multiple family occupancy consisting of three or more units shall have installed in each unit therein an approved fire detection products of combustion system. The detectors shall be sensitive to any of the products of combustion except that detectors sensitive only to heat are not acceptable. Alarm signaling devices shall be clearly audible in all bedrooms when all intervening doors are closed. For the purpose of installation and maintenance only the applicable sections of NFPA No. 74, "Standard for the Installation, Maintenance, and Use of a Household Fire Warning System," shall be considered accepted engineering practices. Installation of said fire detection system shall have prior approval of the Chief of the Fire Department of the City of San Carlos.

The use of any building nonconforming to the provisions of this section at the time of its enactment shall be terminated, or the building shall be made to conform to the provisions of this section on or before January 1, 1977.

Section 13.307 (g)

With the exception of single family residences, the use of any existing building nonconforming to the provisions of this section at the time of its enactment and to which the provisions of this section would otherwise apply if it were proposed for construction at the time of its enactment shall be terminated, or the building shall be made to conform to the provisions of this section on or before July 1, 1976.

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And a new Section 13.307 (h) is created to read as follows:

Section 13.307 (h)

No single family residence shall be sold or rented, and no structural change or repair of a value in excess of $1,000.00 shall be made thereto, unless and until the residence meets the requirements of S 13.307 (c) (1).

FOR ADDITIONAL INFORMATION

MODEL BUILDING CODES

Basic Building Code

Building Officials and Code
Administrators International, Inc.
1313 East 60th Street
Chicago, Illinois 60637

National Building Code

American Insurance Association
86 John Street
New York, New York 10038

Standard Building Code

Southern Building Code Congress
International, Inc.
3617 8th Avenue South
Birmingham, Alabama 35222

Uniform Building Code

International Conference of Building Officials
5600 Workman Road
Whittier, California 90601

STANDARD FOR HOUSEHOLD FIRE WARNING EQUIPMENT

NFPA 74
National Fire Protection Association
470 Atlantic Avenue
Boston, Massachusetts 02210

STANDARDS FOR SMOKE DETECTORS

FM 3230-3250
Factory Mutual
1151 Boston-Providence Turnpike
Norwood, Massachusetts 02062

UL 217
Underwriters' Laboratories, Inc.
333 Pfingston Road
Northbrook, Illinois 60062

LIFE SAFETY CODE

NFPA 101
National Fire Protection Association
470 Atlantic Avenue
Boston, Massachusetts 02210

EVALUATION

What kind of impact is your smoke detector education program making on your community? Has there been a reduction in fatalities due to fires? Are fire departments receiving calls earlier? How many homeowners have installed smoke detectors?

Evaluation is essential for documenting the success of your program. You can make a good start with some relatively simple techniques. For example, telephone surveys, mail surveys, and personal interviews of a sample of your local population are all effective methods. Another is record-keeping of detector-related fire incidence by your local fire department.

USING THIS CHAPTER

An addition to a modification of the Standard NFPA 901 reporting format developed by the Toledo, Ohio, Fire Department in cooperation with NFPCA is included in this chapter. Two additional items, 02 and Q2, relate to the effectiveness of smoke detectors in fire loss reduction. These items, in addition to what you develop, can be used to evaluate the effectiveness of your smoke detector program.

NOTES

TOLEDO, OHIO FIRE INCIDENT REPORTING FORM

Fill In This Room In Your Own Words

BASIC INCIDENT REPORT

Form 9112

1 FD ID 48017 | Day of Incident | Lucas | Toledo | Fire Department | ☐ Add ☐ Delete

A Incident No. | Shift | Month | Day | Year | Day of the Week | Alarm Time | Time — In Service

B Street No. | Dir. | Street, Rd. | Post Office | Type | Zip Code | Census Tract

C Toledo 4 3 6

D Occupant Name | Telephone | Room or Apt.

E Owner Name | Address | Telephone

F Method of Alarm from Public | Type of Situation Found

G Type of Action Taken | Co. Insp. District | Shift | No. Alarms | Mutual Aid ☐ Rec'd ☐ Given

No. Fire Service Personnel Used at Scene | No. Engines Used at Scene | No. Trucks Used at Scene | No. Other Vehicles Used at scene

H 2 No. Incident-related Injuries* Fire Service | Others | No. Incident-related Fatalities* Fire Service | Others

I Fixed Property Use Classification | Complex | Property Type

J Area of Origin | Level of Origin | Construction Type | Mobile Property Type | Construction Method

*Last name, address, and description of injury for each casualty on form 9020.

K Equipment involved in ignition (if any)** | Form of Heat of Ignition

L Type of Material Ignited | Form of Material Ignited | Ignition Factor

**Complete Below

M Extent of Flame Travel | If Flame Spread Beyond Space of Origin | Type of Material Generating Most Flame | Avenue of Flame Travel

N Extent of Smoke Travel | If Smoke Spread Beyond Space of Origin | Type of Material Generating Most Smoke | Avenue of Smoke Travel

O1 Extent of Water Damage | Extent of Fire Control Damage | Termination Stage

O2 Reliance on Equipment (Check all applicable items) | Type of Device Detected | Manufacturer | Model No.

P Time from Alarm to Agent Application | Method of Extinguishment

Q1 Estimated Total Dollar Loss | Detector Performance

Q2 IF NO DETECTOR PRESENT, | Class | Sprinkler Performance

S 3 If Motor Property | Estimated Potential Fire Growth Reduction | Estimated Potential Injury Reduction | Year | Make | Model | Serial No. | License No.

T 4 If Equipment Involved in Ignition | Year | Make | Model | Serial No. | Vintage (if any)

This element is required for the National Fire Data System

☐ Check box if remarks are made on reverse side.

R THIS IS TO CERTIFY THAT IN ACCORDANCE WITH MY DUTIES AND RESPONSIBILITIES AS SET FORTH IN SECTION 3737.08, REVISED CODE, STATE OF OHIO, I HAVE CAUSED TO BE INVESTIGATED THIS FIRE, AND NOW, TO THE BEST OF MY KNOWLEDGE AND ABILITY, SUBMIT REPORT ON SAME.

SIGNED _____ TITLE _____ DATE _____

ENTER IF OF ALL INCIDENTS

CASUALTY OR FIRE

IGNITION

FIRE CONTROL

COMPLETE ON ALL

LINE "Q"

This line should be coded only in the case of a fire where there were no heat or smoke detectors present. The fire officer at the scene must use his best judgement in the determination.

ESTIMATED POTENTIAL FIRE GROWTH REDUCTION (If detector had been present)

1. 10% reduction
2. 20% reduction
3. 30% reduction
4. 40% reduction
5. 50% reduction
6. 60% reduction
7. 70% reduction
8. 80% reduction
9. 90% reduction
10. 100% reduction
11. Vacant or abandoned at time of fire.
12. Occupied, but no one in building.

ESTIMATED POTENTIAL INJURY REDUCTION (If detector had been present)

1. 10% reduction
2. 20% reduction
3. 30% reduction
4. 40% reduction
5. 50% reduction
6. 60% reduction
7. 70% reduction
8. 80% reduction
9. 90% reduction
10. 100% reduction
11. Vacant or abandoned at time of fire.
12. Occupied, but no one in building.

CODING OPTIONS (PFORS)

Behavior of Occupants

1. Followed pre-fire exit plan
2. No plan, but orderly exit
3. Confused exit
4. Panic

Indicate as many as appropriate

1. No injuries
2. Some minor injuries
3. Major injuries
4. Death(s)

1. Occupant called Fire Department
2. Occupant instructed neighbor or passerby to call Fire Department
3. Someone other called Fire Department (SPECIFY)

NOTES